

H. W. Hayden.

Dies for Making Buttons.

N^o 8,159.

Patented Jun. 17, 1851.

Fig. 2.

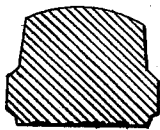
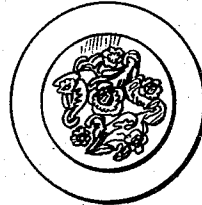


Fig. 1.



Fig. 3.



Witnesses

James P. Goodwin

W. W. Finch

Inventor.

William W. Hayden

UNITED STATES PATENT OFFICE.

H. W. HAYDEN, OF WATERBURY, CONNECTICUT.

IMPROVEMENT IN THE CONSTRUCTION OF DIES.

Specification forming part of Letters Patent No. 8,159, dated June 17, 1851.

To all whom it may concern:

Be it known that I, HIRAM W. HAYDEN, of Waterbury, New Haven county, State of Connecticut, manufacturer and machinist, have invented, made, and applied to use a new and useful Improvement in the Construction of Dies for Producing Ornamental Designs on Metallic Surfaces, for which I seek Letters Patent of the United States; and I hereby declare that the following is a full, clear, and exact description of the construction, operation, and effect of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is a plan of the face of the die. Fig. 2 is a sectional elevation of the die, and Fig. 3 is a representation of the metallic surface that has been ornamented by the die having been impressed on the surface.

The manner of constructing the dies is as follows: The surface of the die being made smooth, the ornamental design, of whatever character it may be, is to be traced in reverse on the die, and then all the parts of the figure that are wanted to be bright are to be cut away or countersunk, and the shading is effected by partially cutting away the surface, as shown in the drawings, Fig. 1. When thus complete, the die is to be placed in a lining-machine, and the whole surface lined or corrugated without reference to the design. This completes the construction of the die, which is to be hardened and then put into any stamping-press, and a plate of metal with a polished surface is to be placed between the die and the similarly-shaped flat die-block, and sufficient pressure given by the press to indent the lines or corrugations on the surface of the dies into the surface of the plate, and the countersinking of the figure in the die does not touch the plate, but leaves the figure, with the original polish of the plate, uninjured, while the surface is deadened or roughened, which makes the figure show distinctly and beautifully. It may at first appear that this is similar to wood-engraving, but the use is so entirely dissimilar, and operation and effect so entirely different, being used merely to deaden bright metallic surfaces or backgrounds while the figure is left bright, that no comparison can be drawn, and there is no similarity of action; and at first sight this may be confounded with embossing metallic or other surfaces, but in embossing the figure is raised, while in mine the

figure or design is left of the original flat surface of the metal; and in embossing, the countersinking of the figure or design in the die has to be finished or polished, to leave a finish to the parts pressed into it, but in mine it makes no difference how roughly the design may be finished in the die, as long as the edges of the parts cut away are correctly formed, and the parts to be left bright are cut away deeper than the bottoms of the lines or corrugations, in mine the countersunk parts of the die never touching the figure or design, but leaving the surface of its original luster.

The nearest approach that I know of to my manner of constructing dies is that now used for forming buttons, for which my improvement was also originally intended, and to distinguish the two inventions, I will now describe the construction of the old die: The surface of the die is turned off, flat and smooth. Then the design is traced upon the surface and outlined rather deep with a graver. The figure or design is then shaded, as usual in steel-engraving, the die is put into a lining-machine that will allow of the cutting-tool being lifted, and the die is to be lined, lifting the tool to pass over the design and then striking into the surface again, and when thus completely lined the die is to be hardened and the design polished, which is very difficult to do without injuring the lines. The die thus formed is struck upon the polished metallic surface, indenting the figure and polishing it, raising up the lines above the figure. This die is very difficult to construct and still more difficult to keep in repair and working order, for the figure has to be kept highly polished to produce the requisite polish on the metallic surface, and the design or figure cannot be polished without polishing the lines, which immediately destroys the beautiful effect on the surface of the metal operated on, and as the whole figure has to be indented sufficient to raise up the lined surface, much power is required, which, with the polishing, soon destroys the dies; but in mine the die never requires polishing, so that the deadened effect produced on the surface of the die by hardening is never effaced, and produces a correspondingly beautiful deadening effect on the surface of the metal; and the whole surface being like a series of very fine chisels, scarcely any power is required to merely impress these in the surface, and by

consequence the die lasts infinitely longer and produces far better effect, for the figure is left of the original beauty and polish of the metallic plate, which never can be effected where the die touches the figure; and, lastly, my die is far cheaper in construction.

I do not claim to be the first to construct a die with a lined surface to deaden the metallic surface operated on; but

What I do claim as new and of my own invention, and desire to secure by Letters Patent of the United States, is—

The application of a die with a lined or cor-

rugated surface with the figure or pattern cut out or countersunk, so that the lined surface deadens the plate of polished metal and leaves the polished surface of the figure untouched, for producing ornamental designs on polished metallic surfaces.

In witness whereof I have hereunto set my signature, at Waterbury, aforesaid, this 11th day of January, 1851.

HIRAM W. HAYDEN.

Witnesses:

NORTON J. BUEL,

JAMES P. GOODWIN.